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10/578,375	05/05/2006	Holger R. Scholl	DE 030377	5697
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EXAMINER ALBERTALLI, BRIAN LOUIS				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/578,375

**Applicant(s)**

SCHOLL, HOLGER R.

**Examiner**

BRIAN L. ALBERTALLI

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Dvorak (U.S. Patent 5,884,266).

In regard to claim 1, Dvorak discloses an audio dialogue system (Fig. 2), comprising

an audio input unit (12) for inputting an audio input signal (see Fig. 2, audio input system),

speech recognition means (20) associated with said audio input unit (12) for converting said audio input signal into a text input data (21) (speech recognition system 250, column 2, lines 33-38),

an audio output unit (12) for outputting an audio output signal (see Fig. 2, audio output system), and speech synthesis means (26) associated with an output unit (12) for converting text output data (24) into said audio output signal (speech synthesis unit 240, column 2, lines 33-38),

browsing means (22) for processing content data (D1) (network protocol processor 230, column 2, lines 50-59), said content data (D1) comprising text content and at least one reference (Ln1, Ln2) (hypertext documents containing resource links,

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column 2, lines 38-45), said reference comprising a reference aim (link to an address, column 2, lines 45-50) and activation information, said activation information comprising one or more activation phrases (28) (text-based link identifiers, column 2, line 60 to column 3, line 22),

said browsing means (22) being configured to control said speech synthesis means (26) to output said text content (link identifiers are output by the speech synthesizer, column 3, lines 23-44),

said browsing means being further configured to compare said input text data (21) to said activation phrase (28) (command processor 250 compares an input voice command to resource links within the hypertext document, column 3, lines 45-66), and

in case of a match, for accessing content data (D2) corresponding to said reference aim (the corresponding address is accessed, column 3, lines 62-66), where in case that said text input data (21) is not identical to said activation phrase (28), said browsing means (22) find a match, if said input text data (21) has a meaning similar to said activation phrase (28) (command processor 250 finds a match if the inputted voice command "includes at least a portion of a particular text-based resource link identifier"; thus, if the inputted voice command is not identical, the browsing means still finds a match with a similar meaning, i.e. a link with at least a portion of the identifier, column 3, lines 45-52).

In regard to claim 8, Dvorak discloses a voice browsing method (Figs. 3 and 4), comprising

processing content data (D1), said content data (D1) comprising text content and at least one reference (LN1) (accessing a hypertext document containing information source addresses, column 4, lines 3-13),

said reference comprising a reference aim (address) and activation information, said activation information comprising one or more activation phrase (28) (text-based link identifiers, column 4, lines 3-13),

converting said text content to an audio output signal using speech synthesis, and outputting said audio output signal (text-based identifiers are output as speech, column 4, lines 13-23),

acquiring an audio input signal, and using speech recognition to convert said audio input signal to text input data (21) (receiving and recognizing a voice command, column 4, lines 24-28),

comparing said text input data (21) to said activation phrase (28) and in case that said text input data is not identical to said activation phrase (28), indicating a match if said input text data (21) has a meaning similar to said activation phrase (28), and in case of a match accessing content data (D2) corresponding to said reference aim (the voice command is matched to a link identifier and the information source address is accessed, column 4, lines 28-36).

2. Claims 1-6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Ehsani et al. (U.S. Patent Application 2002/0032564).

In regard to claim 1, Ehsani et al. disclose an audio dialogue system (Fig. 6), comprising

an audio input unit (12) for inputting an audio input signal (see Fig 6, voice input), speech recognition means (20) associated with said audio input unit (12) for converting said audio input signal into a text input data (21) (speech recognition front end, page 11, paragraph 207),

an audio output unit (12) for outputting an audio output signal, and speech synthesis means (26) associated with an output unit (12) for converting text output data (24) into said audio output signal (speech output backend, page 11, paragraph 211 and page 12, paragraph 217),

browsing means (22) for processing content data (D1) (application interface, page 12, paragraph 216; the content including voice pages, page 13, paragraph 231), said content data (D1) comprising text content and at least one reference (Ln1, Ln2) (markup language and navigation links, page 13, paragraph 241), said reference comprising a reference aim and activation information, said activation information comprising one or more activation phrases (28) (the navigation links are expanded to allowed phrase commands, page 13, paragraph 243),

said browsing means (22) being configured to control said speech synthesis means (26) to output said text content (navigation links and lists of options which are output to the user, pages 13-14, paragraphs 243-244),

said browsing means being further configured to compare said input text data (21) to said activation phrase (28), and in case of a match, for accessing content data

(D2) corresponding to said reference aim (the user input is used to retrieve information from the internet, page 12, paragraph 216),

where in case that said text input data (21) is not identical to said activation phrase (28), said browsing means (22) find a match, if said input text data (21) has a meaning similar to said activation phrase (28) (allowable input utterances include linguistic variants, page 14, paragraph 245, so that linguistic variants are reduced to the same activation phrase, page 11, paragraph 214).

In regard to claim 2, Ehsani et al. disclose said system further comprising dictionary means (30) for storing, for a plurality of search words (32a), connected words (32b, 32c, 32d) with a meaning connected to the meaning of said search words (32a) (phrase thesaurus, page 3, paragraph 36)

where said browsing means (22) are configured to retrieve connected words (32b, 32c, 32d) for words comprised in said input text data (21) and/or for words comprised in said activation phrase (28) (allowable phrases are expanded to include linguistic variants, page 14, paragraph 245), and

use said connected words (32b, 32c, 32d) for said comparison (the phrase thesaurus is used during recognition of activation links, page 14, paragraph 248).

In regard to claim 3, Ehsani et al. disclose said dictionary means (30) comprise for at least some of said search words (32a), connected words (32b, 32c, 32d) which fall into one or more of the categories out of the group consisting of: synonyms, hyponyms,

hypernyms, holonyms, meronyms (semantically equivalent phrases, page 3, paragraphs 36-44).

In regard to claim 4, Ehsani et al. disclose said browsing means (22) are configured to establish a co-occurrence matrix giving for a plurality of terms and for a plurality of activation phrases the number of occurrences of said terms in said phrases (an  $M \times N$  co-occurrence matrix, page 9, paragraph 176),

perform a singular value decomposition of said co-occurrence matrix to calculate a semantic space (SVD, page 10, paragraph 179), and

determine a similarity by representing said input text data (21) and said activation phrase (28) as vectors in said semantic space, and calculating a measure for the angle between these vectors (cosine coefficient, page 9, paragraph 174).

In regard to claim 5, Ehsani et al. disclose said browsing means (22) are configured to determine a word frequency for a plurality of words in all activation phrases of all links in said content data (frequency of occurrence of N-grams of length 1, page 5, paragraphs 88-93), and determine a similarity by finding common words in said input text data (21) and said activation phrase (28) (using the phrase thesaurus during recognition of activation links, page 14, paragraph 248).

In regard to claim 6, Ehsani et al. disclose said browsing means (22) are configured to determine a word sequence frequency for a plurality of word sequences of



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all activation phrases (28) of all of said links in said content data (frequency of occurrence of N-grams of length > 1, page 5, paragraphs 88-93, and determine a similarity by processing word sequences of said input text data (21) (using the phrase thesaurus during recognition of activation links, page 14, paragraph 248).

In regard to claim 8, Ehsani et al. disclose a voice browsing method, comprising: processing content data (D1), said content data (D1) comprising text content and at least one reference (LN1) (processing markup language and navigation links, page 13, paragraph 241), said reference comprising a reference aim and activation information, said activation information comprising one or more activation phrase (28) (the navigation links are expanded to allowed phrase commands, page 13, paragraph 243),

converting said text content to an audio output signal using speech synthesis, and outputting said audio output signal (synthesizing speech through output backend, page 11, paragraph 211 and page 12, paragraph 217,

acquiring an audio input signal, and using speech recognition to convert said audio input signal to text input data (21) (recognizing speech through speech recognition front end, page 11, paragraph 207),

comparing said text input data (21) to said activation phrase (28) and in case that said text input data is not identical to said activation phrase (28), indicating a match if said input text data (21) has a meaning similar to said activation phrase (28) (allowable input utterances include linguistic variants, page 14, paragraph 245, so that linguistic

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variants are reduced to the same activation phrase, page 11, paragraph 214), and in case of a match accessing content data (D2) corresponding to said reference aim (the user input is used to retrieve information from the internet, page 12, paragraph 216).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dvorak, in view of Kellner et al. (*SPICE*).

Dvorak suggests that, in the case that a user input does not exactly match an activation link, a link with a similar meaning will still be selected as correct (if the user input includes "at least a portion" of a particular activation link, column 3, lines 47-52).

However, Dvorak does not disclose a fuzzy matching technique such as that described in claim 7.

Kellner et al. disclose a system for matching a user input to activation links, where:

for each of said links a language model is trained (stochastic language models, page 8),

said language model comprising word sequence frequencies (a stochastic language model, by definition, models word sequence frequencies, i.e. n-grams, page 8), and

said input text data (21) is compared to each of said language models by determining a score indicating an agreement of said input text data (21) with said model, and said similar meaning is determined according to said score (phrases are scored against the language models to determine a score, a higher score representing a more similar meaning, page 8).

Thus, the prior art contains each element claimed, the only difference between the claimed invention and the prior art being the lack of actual combination of the references in a single prior art reference. One of ordinary skill in the art at the time of invention could have combined the elements by matching input text to activation links by scoring them against a language model as disclosed by Kellner et al. In combination, each element would have performed the same function as it would separately (i.e. the matching of input text to activation links disclosed by Dvorak would be aided by the language models of Kellner et al.) Furthermore, one of ordinary skill in the art at the time of invention would have recognized that the result of the combination would predictably match text inputs to the activation links having the closest similar meaning.

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Brown et al. (U.S. Patent 6,604,075) disclose a dialog interface that matches inputs to activation links with similar meanings using a thesaurus. Bellegarda et al. (U.S. Patent 6,208,971) disclose a system that matches inputs to activation links using LSA. Hambleton et al. (U.S. Patent 6,178,404) disclose matching input synonyms to activation links. Mayer (U.S. Patent 6,282,511) discloses a system for synthesizing activation links for the user.
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN L. ALBERTALLI whose telephone number is (571)272-7616. The examiner can normally be reached on Mon - Fri, 8:00 AM - 5:30 PM, every second Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BLA 5/12/08

/David R Hudspeth/

Supervisory Patent Examiner, Art Unit 2626